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TITLE : PERMANENT MAGNET ALLOY

ABSTRACT : PURPOSE: To improve oxidation resistance and corrosion resistance by segregating elements such as Nb, Ta, V, Ti, etc., in the grain boundary of a rare earth element-Fe-B magnet alloy.

CONSTITUTION: A permanent magnet alloy has a composition represented by $R(Fe_{1-x-y}B_xM_y)_A$, where R is a combination of 1 or ≥ 2 kinds among rare earth elements, M is a combination of 1 or ≥ 2 elements among Nb, Ta, V, Ti and Al, $0.02 \leq x \leq 0.3$, $0.0001 \leq y \leq 0.03$ and $4 \leq A \leq 7.5$. A powdered alloy having the above composition is compacted in the magnetic field and the resulting green compact is sintered to segregate Nb, Ta, V and Ti in the grain boundary of the alloy. In this way, oxidation resistance and corrosion resistance in the grain boundary is improved and in its turn magnetic properties, oxidation resistance, etc., of the whole permanent magnet alloy sintered compact can be improved.

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